

Electronic supplementary material

Title: Insulin Pump Treatment in Adults with Type 1 Diabetes in the Capital Region of Denmark: Design and Cohort Characteristics of the Steno Tech Survey

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Table S1: English translation of the Steno Tech Survey questionnaire

In the following questionnaire, the Insulin Device Satisfaction Survey¹, the Glucose Monitoring System Satisfaction Survey² and the COVID-19 Impact on Quality of Life Dimensions³ were translated from English to Danish using the internationally recognized forward-backward translation procedure⁴. In this document, references to original publications rather than full questionnaire scales are provided for copyright reasons.

Page 1 of 28: Introduction and consent form.

Page 2 of 28: Insulin pump characteristics

Scale/item [branching logic]	Question	Response categories
<p>The first part of the questionnaire is about your insulin pump. There are also questions about your use of a glucose sensor, if applicable.</p> <p>When you are done answering all the questions on a page, click “next page” at the bottom of the page in order to continue.</p> <p>It takes about 30 minutes to complete the entire questionnaire. You can take a break along the way and continue the questionnaire later by simply shutting down the page and using the link in e-Boks again – disregard the “save and return later” button.</p>		
pumptype	Which insulin pump are you currently using? You will be shown a picture of the insulin pump below when you click on the name of the insulin pump.	1. MiniMed 640G 2. MiniMed 670G 3. MiniMed Paradigm/VEO 4. Accu-Chek Combo 5. Accu-Chek Insight 6. Omnipod 7. Medtrum 8. Tandem t:slim X2 9. YpsoPump 10. Animas Vibe 11. Other 12. I use a hybrid closed-loop system that I built myself with an open-source software such as OPENAPS, AndroidAPS or Loop.
pumptype_other [if pumptype = 11]	Which other insulin pump are you currently using?	Free-form text response
diabetesdebut	In which year were you diagnosed with type 1 diabetes? If you do not remember the exact year, please provide an approximate estimate.	Free-form text response
pumpyear	In which year did you get your first insulin pump? If you do not remember the exact year, please provide an approximate estimate.	Free-form text response

pumpindication	For which reason(s) were you initially offered an insulin pump by your healthcare provider? Feel free to choose multiple reasons.	1. I had too high long-term blood glucose (HbA1c) 2. I had major fluctuations in my blood sugar 3. I could not feel low blood sugars 4. Other 5. Do not know/do not remember
pumpindication_other [if pumpindication = 4]	For which other reasons were you offered an insulin pump?	Free-form text response
pumpwhy	Why did you initially agree to start insulin pump treatment? Feel free to choose multiple reasons.	1. To improve long-term blood glucose (HbA1c) 2. To achieve a more stable blood sugar (fewer fluctuations) 3. To reduce the number of high blood sugars 4. To reduce the number of low blood sugars 5. To get better sleep 6. To be able to eat more flexibly 7. To be able to exercise more spontaneously 8. To make it easier to take and dose insulin 9. To avoid injecting myself several times a day 10. My healthcare provider recommended it to me 11. Other insulin pump users recommended it to me 12. To make my diabetes fill less in my life 13. Other 14. Do not know/do not remember
pumpwhy_other [if pumpwhy = 13]	For which other reason(s) did you to agree to start insulin pump treatment?	Free-form text response

Page 3 of 28: Use of insulin pump functions

Scale/item [branching logic]	Question	Response categories
The following questions are about how you are using your current insulin pump.		
bolus	How do you <u>usually</u> take bolus insulin?	1. Bolus calculator/bolus guide 2. Manual bolus (including fast bolus) 3. I use both equally often 4. I very rarely take bolus insulin
bolus_whynot [if bolus = 4]	Why don't you typically use the bolus guide to calculate bolus insulin?	1. It is too difficult to use 2. I did not learn it at pump start and have not started doing it since 3. I do not trust the bolus guide's calculations 4. I calculate bolus myself, as my experience is that this works best 5. Other 6. Do not know
bolus_whynot_other [if bolus_whynot = 5]	For which other reason(s) don't you typically use the bolus guide to calculate bolus insulin?	Free-form text response

bolususe_intro [if pumptype ≠ 11 or 12 and bolus ≠ 4]	How often do you use your bolus calculator to...	
bolususe1 [if pumptype ≠ 11 or 12 and bolus ≠ 4]	... calculate bolus for food?	1. Never/rarely 2. Occasionally 3. Often 4. Always/almost always
bolususe2 [if pumptype ≠ 11 or 12 and bolus ≠ 4]	... calculate correction-insulin for elevated blood sugar?	1. Never/rarely 2. Occasionally 3. Often 4. Always/almost always
bolusbasalfunctions_intro [if pumptype ≠ 2, 11 or 12]	How often do you use these insulin pump functions when they are relevant?	
bolus1 [if pumptype ≠ 2, 11 or 12 and bolus ≠ 4]	Combined bolus when it is relevant (e.g., for fast food)	1. Never/rarely 2. Occasionally 3. Often 4. Always/almost always
bolus2 [if pumptype ≠ 2, 11 or 12 and bolus ≠ 4]	Extended bolus when it is relevant (e.g., low blood sugar before a meal)	1. Never/rarely 2. Occasionally 3. Often 4. Always/almost always
basal1 [if pumptype ≠ 2, 11 or 12]	Temporary basal up when it is relevant (e.g., in the case of illness)	1. Never/rarely 2. Occasionally 3. Often 4. Always/almost always
basal2 [if pumptype ≠ 2, 11 or 12]	Temporary basal down when it is relevant (e.g., exercise)	1. Never/rarely 2. Occasionally 3. Often 4. Always/almost always
manualfunctions_intro [if pumptype = 2]	How often do you use these insulin pump functions when they are relevant, and you are in manual mode?	1. I am almost never in manual mode besides when I change infusion set
bolus1_670G [if pumptype = 2 and manualfunctions_intro ≠ 1]	Combined bolus when it is relevant (e.g., fast food)	1. Never/rarely 2. Occasionally 3. Often 4. Always/almost always
bolus2_670G [if pumptype = 2 and manualfunctions_intro ≠ 1]	Extended bolus when it is relevant (e.g., low blood sugar before a meal)	1. Never/rarely 2. Occasionally 3. Often 4. Always/almost always
basal1_670G [if pumptype = 2 and manualfunctions_intro ≠ 1]	Temporary basal up when it is relevant (e.g., in the case of illness)	1. Never/rarely 2. Occasionally 3. Often 4. Always/almost always
basal2_670G [if pumptype = 2 and manualfunctions_intro ≠ 1]	Temporary basal down when it is relevant (e.g., exercise)	1. Never/rarely 2. Occasionally 3. Often 4. Always/almost always
autofunctions_intro [if pumptype = 2]	How often do you use temporary target-blood sugar when relevant (e.g., exercise) and you are in auto-mode?	1. Never/rarely 2. Occasionally 3. Often 4. Always/almost always
insulindosehow [if bolus ≠ 4]	When do you typically take bolus insulin for meals?	1. Before the meal (10 minutes or more) 2. Just before the meal

		3. During the meal 4. After the meal
missedbolus [if bolus ≠ 4]	How often do you forget bolus insulin for meals?	1. Never 2. Once a month or less 3. Once a week or less 4. Twice a week 5. 3-4 times a week 6. 5-6 times a week 7. At least once a day
carbhow [if bolus ≠ 4]	How do you typically enter carbohydrates into the insulin pump?	1. I typically enter the estimated/calculated amount of carbohydrates 2. I typically enter the same amount of carbohydrates regardless of small variations in the meal 3. I never enter carbohydrates in the insulin pump
carbhow_intro [if bolus ≠ 4 and carbhow ≠ 3]	How often do you do the following when entering carbohydrates into the insulin pump? This does not include intake of carbohydrates at low blood sugar or as a preventative measure before exercise.	
mainmeal [if bolus ≠ 4 and carbhow ≠ 3]	I enter at main meals	1. Never/rarely 2. Occasionally 3. Often 4. Always/almost always
snack1 [if bolus ≠ 4 and carbhow ≠ 3]	I enter anything over 10 g carbohydrates	1. Never/rarely 2. Occasionally 3. Often 4. Always/almost always
snack2 [if bolus ≠ 4 and carbhow ≠ 3]	I enter anything over 5 g carbohydrates	1. Never/rarely 2. Occasionally 3. Often 4. Always/almost always
allmeals1 [if bolus ≠ 4 and carbhow ≠ 3]	I deliberately enter more carbohydrates than the calculated amount	1. Never/rarely 2. Occasionally 3. Often 4. Always/almost always
allmeals2 [if bolus ≠ 4 and carbhow ≠ 3]	I deliberately enter less carbohydrates than the calculated amount	1. Never/rarely 2. Occasionally 3. Often 4. Always/almost always

Page 4 of 28: Insulin pump data, settings and maintenance

Scale/item [branching logic]	Question	Response categories
The following questions are about how you use data upload from your insulin pump to your computer and how you adjust the functions of your insulin pump.		
pumpdata	How often do you transfer data from your insulin pump to your computer?	1. Never 2. Once a year or less 3. 2-5 times a year 4. Every two months 5. Once a month 6. Once a week or more often 7. Every day

pumpdata_why [if pumpdata = 3, 4, 5, 6 or 7]	Why do you transfer data from your insulin pump to your computer? Feel free to choose multiple reasons.	1. So that my <u>healthcare provider</u> can analyze the development of my blood sugar and whether the insulin pump is set correctly 2. So that <u>I</u> can analyze the development of my blood sugar and whether the insulin pump is set correctly 3. Other 4. Do not know
Pumpdata_why_other [if pumpdata_why = 3]	For what other reasons do you transfer data from your insulin pump to your computer?	Free-form text response
pumpdata_why [if pumpdata = 1 or 2]	Why do you never/rarely transfer data from your insulin pump to your computer at home? Feel free to choose multiple reasons.	1. I do not own a computer 2. I did not know it was a possibility 3. I do not know how to do it 4. Data is too hard to understand 5. It takes too long 6. The insulin pump program is not compatible with my computer 7. I prefer to keep a diabetes diary 8. I do not find the data useful 9. I do not like seeing my data 10. I do not want to share my data with an insulin pump company 11. I do not feel the need to transfer data at home 12. Other 13. Do not know
pumpdata_whynot_other [if pumpdata_why = 12]	For what other reasons do you not transfer data from your insulin pump to your computer?	Free-form text response
pumpadjust	Who primarily decides changes in your insulin pump's basic settings? E.g., carbohydrates, insulin sensitivity, basal rates.	1. My healthcare provider 2. Myself 3. My next of kin
adjustself1 [if pumpadjust = 1]	Even though it is primarily your healthcare provider who decides the settings, do you do it yourself sometimes?	1. Yes 2. No
adjustself2 [if pumpadjust = 2 or adjustself1 = 1]	When you adjust the basic settings of the insulin pump yourself, which ones do you typically adjust? Feel free to choose multiple options.	1. Carbohydrate ratio 2. Insulin sensitivity 3. Basal rate 4. Insulin's duration/time of action 5. Target blood sugar
daysset	How many days typically pass between you changing insulin needle/insulin catheter or pod/patch?	Drop-down menu from 1 to 10 days.

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Scale/item [branching logic] [branching logic]	Question	Response categories
The following questions are about your possible use of sensor or flash glucose measuring device.		
sensor	Are you currently using a continuous or flash glucose monitor (sensor)?	1. Yes 2. No
sensortype [if sensor = 1]	Which sensor system do you use? You will be shown a picture of the sensor	1. Flash Libre

	system below when you click on the name of the system.	2. Guardian to 640/670G insulin pump 3. Minilink for Paradigm/VEO insulin pump 4. Guardian connect 5. Dexcom (G4, G5 or G6) 6. Eversense 7. Medtrum 8. Other
bgmeasure_flash [if sensor = 1 and sensortype = 1]	How often do you typically scan your Flash Libre? (press 'menu', 'browse histor' and press the down arrow to 'sensor use' on your Flash Libre to see your daily number of scans).	1. Rarer than once a day 2. 1-3 times daily 3. 4-6 times daily 4. 7-9 times daily 5. 10 or more times a day
flash_who [if sensortype = 1]	Who pays for your Flash Libre?	1. Municipality 2. The hospital/region 3. Out-of-pocket payment 4. Do not know
sensortype_other [if sensortype = 8]	What other sensor are you using?	Free-form text response
sensorstop [if sensor = 0]	Have you previously used a sensor but stopped?	1. Yes 2. No
sensorstop_why [if sensorstop = 1]	Why did you stop using a sensor? Feel free to choose multiple reasons.	1. Skin problems 2. Too many alarms 3. Technical problems (e.g., signal failure) 4. Not accurate enough 5. Annoying to wear 6. Attachment problems 7. Information overload 8. It was too difficult to understand and use the sensor values 9. Other 10. Do not know/do not remember
sensorstop_why_other [if sensorstop_why = 9]	What other reasons were there for you to stop using a sensor?	Free-form text response
bgmeasure [if sensor = 0]	How often do you measure your blood sugar?	1. Less than once a day 2. 1-3 times daily 3. 4-6 times daily 4. 7-9 times daily 5. 10 or more times a day
sensoryear [if sensor = 1]	In which year did you get your first sensor? If you do not remember the exact year, please provide an approximate estimate	Free-form text response
sensorindication [if sensor = 1]	What was the reason for you originally being offered a sensor? Feel free to choose multiple reasons.	1. I had too high long-term blood sugar (HbA1c) 2. I had severe fluctuations in my blood sugar levels 3. I could not feel when I had low blood sugar 4. I could not make blood sugar reading work at work (e.g., due to hygiene requirements) 5. I had problems with my fingers/hands 6. Other 7. Do not know/do not remember

		8. I was not offered a sensor. I bought it and continue to pay for it myself
sensorindication_other [if sensorindication = 6]	What other reasons were there for you originally being offered a sensor?	Free-form text response
whysensor [if sensor = 1]	For which reason(s) did you initially agreed to use a sensor? Feel free to choose multiple reasons.	<ol style="list-style-type: none"> 1. To improve my long-term blood sugar (HbA1c) 2. To achieve a more stable blood sugar level (fewer fluctuations) 3. Because I could not feel my low blood sugar 4. To feel more comfortable in general 5. I could not make blood sugar reading work at work (e.g., due to hygiene requirements) 6. I had problems with my fingers/hands 7. To achieve better sleep 8. To follow sensor values during exercise 9. Other 10. Do not know/do not remember
whysensor_other [if whysensor = 9]	What other reasons were there for you to agree to use/buy the sensor?	
sensor_no [if sensor = 1]	How many days are you without a sensor within a typical month?	<ol style="list-style-type: none"> 1. Only when changing the sensor or short sensor problems/updates (0 days) 2. 1 day 3. 2-3 days 4. 4-5 days 5. 6-7 days 6. More than 7 days 7. Do not know
stoplow [if pumptype = 1, 3, 7 or 8 and sensor = 1 and pumptype ≠ 11 or 12]	Is 'stop at low' or 'stop before low' activated on your insulin pump?	<ol style="list-style-type: none"> 1. Yes 2. No
trend_intro	The following questions are about how you use the sensor's trend arrows.	
trend1 [if sensor = 1 and pumptype ≠ 11 or 12]	How often do you eat food without bolus if the trend arrows on your sensor show a decreasing tendency?	<ol style="list-style-type: none"> 1. Never/rarely 2. Occasionally 3. Often 4. Always/almost always
trend2 [if sensor = 1 and pumptype ≠ 2, 11 or 12]	How often do you stop or reduce the basal rate if the trend arrows on your sensor show a decreasing tendency?	<ol style="list-style-type: none"> 1. Never/rarely 2. Occasionally 3. Often 4. Always/almost always
trend3 [if sensor = 1 and pumptype ≠ 2, 11 or 12]	How often do you use the trend arrows to take more or less than the insulin pump's suggestion for bolus?	<ol style="list-style-type: none"> 1. Never/rarely 2. Occasionally 3. Often 4. Always/almost always
autoupload [if sensortype = 1, 3, 4, 5 or 6 and pumptype ≠ 11 or 12]	Do you use auto-upload via an app on your phone or tablet to read your sensor data?	<ol style="list-style-type: none"> 1. Yes 2. No
sensordataupload [if autoupload = 0 and sensortype = 1, 3, 4, 5 or 6]	How often do you transfer data from your sensor to your computer?	<ol style="list-style-type: none"> 1. Never 2. Once a year or fewer 3. 2-5 times a year 4. Every two months 5. Once a month

		6. Once a week or more often 7. Every day 8. Not relevant
sensordataupload_whynot [if sensordataupload = 1 or 2]	Why do you never/rarely transfer data from your sensor to your computer at home? Feel free to choose multiple reasons.	1. I do not have a computer 2. I did not know it was a possibility 3. I do not know how to do it 4. The data are too hard to understand 5. It takes too long 6. The sensor program is not compatible with my computer 7. I prefer to keep a diabetes diary 8. I do not find the data useful 9. I do not like seeing my data 10. I do not want to share my data with a sensor company 11. I do not feel the need to transfer data at home 12. Other 13. Do not know
sensordataupload_whynot_other [if sensordataupload_whynot = 12]	What other reasons are there for you not transferring data from your sensor to your computer at home?	Free-form text response
sensorshare [if sensor = 1, 3, 4, 5, 6 or pumptype = 12.	Do you share sensor data with your next of kin using the sensor's share function?	1. Yes 2. No
sensorshare_who [if sensorshare = 1]	Which next of kin do you share your sensor data with? Feel free to choose multiple options.	1. Spouse/significant other 2. Children 3. Parents 4. Friends 5. Others

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Scale/item [branching logic]	Question	Response categories
Think back to the teaching and guidance you received when you started your insulin pump treatment. By this we mean a course lasting a day or more in which you received information and guidance on insulin pump treatment and the use of the insulin pump.		
educationdur	Approximately how long did the start-up/education last?	1. 1 day or less 2. 2-3 days 3. 3-4 days 4. Other 5. Do not remember
education_other [if educationtime = 4]	Did the start-up/education take place over a longer or shorter period? Please be specific.	Free-form text response
educationprep	How did you prepare for the insulin pump start-up? Feel free to choose multiple options.	1. I found information on the internet about insulin pump treatment 2. I talked to other insulin pump users in my network 3. I sought out groups on social media with insulin pump users 4. I did not seek out special information other than the information given to me by my health care provider 5. I do not remember
educationhcp	Who taught you about insulin pump start-up? Feel free to choose multiple options.	1. Representative from a pump company 2. Dietitian

		3. Diabetes doctor 4. Diabetes nurse 5. I do not remember
educationt	How did the teaching take place?	1. I received mostly group-based lessons 2. I received mostly individual instruction 3. I do not remember
educationfam	Were your relatives invited to all or part of the education?	1. Yes 2. No 3. I do not remember
educationgroup_intro [if education = 1]	To what degree do you agree with the following statements?	
educationgroup1 [if educationt = 1]	Group education suited me well.	1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree
educationgroup2 [if educationt = 1]	I appreciated talking to the other participants in the group and hearing about their experiences.	1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree
educationgroup3 [if educationt = 1]	I would have preferred individual education.	1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree
educationgroup4 [if educationt = 1 and educationfam = 1]	I found it valuable that my next of kin could participate in all or part of the education.	1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree
educationind_intro [if education = 2]	To what degree do you agree with the following statements?	
educationind1 [if education = 2]	The individual education suited me well.	1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree
educationind2 [if education = 2]	I appreciated having time with the teacher alone without other participants present.	1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree
educationind3 [if education = 2]	I would have preferred group training with others in the same situation.	1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree
educationind4 [if education = 2 and educationfam = 1]	I found it valuable that my next of kin could participate in all or part of the teaching.	1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree

Page 7 of 28: Ongoing insulin pump education

Scale/item [branching logic]	Question	Response categories
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The following questions are about the teaching or exchange of experience you have participated in as an experienced insulin pump user.		
educationnow	Have you participated in either of these types of courses in relation to your insulin pump treatment in the past 5 years? If you have participated in both, choose the course you remember best.	1. Carbohydrate counting course in a group2. "Refresher course": experience-sharing course about insulin pump in a group3. No, I have not participated in such courses in the past 5 years
educationgroup2intro	To what degree do you agree with the following statements?	
educationgroup21 [educationnow = 1 or 2]	Group education suited me well.	1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree
educationgroup22 [educationnow = 1 or 2]	I appreciated talking to the other participants in the group and hearing their experiences.	1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree
educationgroup23 [educationnow = 1 or 2]	I would have preferred individual education.	1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree

Page 8 of 28: Insulin pump education needs

Scale/item [branching logic]	Question	Response categories
In the following, we ask about your current needs for knowledge, education and experience-sharing about your insulin pump.		
knowledge1	Do you need a 'refresher' or more knowledge about the use of the different insulin pump features?	1. No 2. Yes, to some degree 3. Yes, very much 4. I do not know
knowledge2	Do you need sparring and experience-sharing in relation to everyday-life with your insulin pump? Topics could be family life, sport, working life, travel, or the fact that you carry an insulin pump 24/7.	1. No 2. Yes, to some degree 3. Yes, very much 4. I do not know
knowledge3	Do you need more practical knowledge of the upload and interpretation of data from your insulin pump and possible sensor? (With upload we mean transferring data to computer/app, e.g., blood glucose levels, sensor curves and insulin doses).	1. No 2. Yes, to some degree 3. Yes, very much 4. I do not know
knowledge4	Do you need more knowledge and/or practical training in how you can adjust the insulin pump settings yourself?	1. No 2. Yes, to some degree 3. Yes, very much 4. I do not know
knowledge5	Do you seek out knowledge about new initiatives in insulin pump treatment on, e.g., the internet or in networks with other insulin pump users outside your place of treatment?	1. No 2. Yes, to some degree 3. Yes, very much 4. I do not know

Scale/item [branching logic]	Question	Response categories
The next questions are about carbohydrate counting.		
carbcount	Do you count carbohydrates?	1. Yes 2. No
carbcount_whynot [if carbcount = 2]	Why don't you count carbohydrates? Feel free to choose multiple reasons.	1. I never learned it 2. It is too much of a hassle 3. I lack training/practice in it 4. I do not feel that I need it 5. Other reasons 6. I do not know
carbcount_whynot_other [if carbcount_whynot = 5]	For what other reasons do you not count carbohydrates?	Free-form text response
carbcount_how [if carbcount = 1]	Which methods do you use to count carbohydrates? Feel free to choose multiple methods.	1. I eyeball 2. I use weight 3. I use an app 4. I use nutrition fact declarations 5. I use encyclopedias (e.g., carbohydrate lists) 6. I use Google 7. None of the above
carbcount_learn [if carbcount = 1]	How did you learn to count carbohydrates? Feel free to choose multiple reasons.	1. Individual guidance from dietitian 2. Carbohydrate counting course 3. Self-taught (e.g., from books, social media or experience-sharing with others) 4. None of the above
carbcount_intro	<p>You now have the opportunity to participate in a carbohydrate counting challenge.</p> <p>If you eat the following food items occasionally or often, you will be shown a picture of different portion sizes for the given item. You must then pick the portion size you typically eat and state the amount of carbohydrates you think it contains. The rules are simple: you cannot use aids such as carbohydrate lists, apps, or nutrition fact declarations. The idea is that you simply respond based on your immediate assessment of carbohydrate content in each item.</p> <p>On the last page of the questionnaire, you can compare your response with the actual amount of carbohydrates in each food.</p>	1. I would like to participate 2. I do not want to take part in the challenge
choco1 [if carbcount = 1 and carbcount_intro = 1]	How often do you eat dark chocolate?	1. Rarely/Never 2. Occasionally 3. Often
choco2 [if choco1 = 2 or 3]	Select the image that matches the portion size you typically eat. If you typically eat a larger or smaller portion	1. Portion size A 2. Portion size B 3. Portion size C

	than any of the shown, select the image that comes closest.	4. Portion size D 5. Portion size E 6. Portion size F
choco3 [if choco1 = 2 or 3]	[Image removed due to copyright]	
choco4 [if choco2 ≠ .]	Type the amount of carbohydrates (in grams) that are on the image you have selected.	Free-form text response
pasta1 [if choco1 = 1 or choco4 ≠ .]	How often do you eat pasta?	1. Rarely/Never 2. Occasionally 3. Often
pasta2 [if pasta1 = 2 or 3]	Select the image that matches the portion size you typically eat. If you typically eat a larger or smaller portion than any of the shown, select the image that comes closest.	1. Portion size A 2. Portion size B 3. Portion size C 4. Portion size D 5. Portion size E 6. Portion size F
pasta3 [if pasta1 = 2 or 3]	[Image removed due to copyright]	
pasta4 [if pasta2 ≠ .]	Type the amount of carbohydrates (in grams) that are on the image you have selected.	Free-form text response
grapes1 [if pasta1 = 1 or pasta4 ≠ .]	How often do you eat grapes?	1. Rarely/Never 2. Occasionally 3. Often
grapes2 [if grapes1 = 2 or 3]	Select the image that matches the portion size you typically eat. If you typically eat a larger or smaller portion than any of the shown, select the image that comes closest.	1. Portion size A 2. Portion size B 3. Portion size C 4. Portion size D 5. Portion size E 6. Portion size F
grapes3 [if grapes1 = 2 or 3]	[Image removed due to copyright]	
grapes4 [if grapes2 ≠ .]	Type the amount of carbohydrates (in grams) that are on the image you have selected.	Free-form text response
bun1 [if grapes1 = 1 or grapes4 ≠ .]	How often do you eat wholegrain bread rolls?	1. Rarely/Never 2. Occasionally 3. Often
bun2 [if bun1 = 2 or 3]	Select the image that matches the portion size you typically eat. If you typically eat a larger or smaller portion than any of the shown, select the image that comes closest.	1. Portion size A 2. Portion size B 3. Portion size C 4. Portion size D 5. Portion size E
bun3 [if bun1 = 2 or 3]	[Image removed due to copyright]	
bun4 [if bun2 ≠ .]	Type the amount of carbohydrates (in grams) that are on the image you have selected.	Free-form text response

Page 10 of 28: Insulin pump satisfaction

The Insulin Device Satisfaction Survey has been removed from this document due to copyright. The complete scale can be found in the original publication: *Development of a New Measure for Assessing Insulin Delivery Device Satisfaction in Patients with Type 1 and Type 2 Diabetes*.¹

Page 11 of 28: Glucose sensor satisfaction

The Glucose Monitoring System Satisfaction Survey has been removed from this document due to copyright. The complete scale be found in the original publication: *Development of a New Measure for Assessing Glucose Monitoring Device-Related Treatment Satisfaction and Quality of Life*.²

Page 12 of 28: Body image

Scale/item [branching logic]	Question	Response categories
We would like to know how you experience wearing the insulin pump on your body.		
bodyimageintro1	Please indicate the degree to which you agree or disagree with the following statements:	
bodyimage1	The insulin pump makes me feel me different in the eyes of others	1. Strongly disagree 2. Disagree 3. Neither disagree nor agree 4. Agree 5. Strongly agree
bodyimage2	It bothers me that I always have an insulin catheter in my body	1. Strongly disagree 2. Disagree 3. Neither disagree nor agree 4. Agree 5. Strongly agree
bodyimage3	With the insulin pump, others immediately notice that I have diabetes	1. Strongly disagree 2. Disagree 3. Neither disagree nor agree 4. Agree 5. Strongly agree
bodyimage4	The insulin pump makes me less attractive	1. Strongly disagree 2. Disagree 3. Neither disagree nor agree 4. Agree 5. Strongly agree
bodyimageintro2	Please indicate the degree to which you agree or disagree with the following statements:	
bodyimage5	The insulin pump bothers me when I sleep	1. Strongly disagree 2. Disagree 3. Neither disagree nor agree 4. Agree 5. Strongly agree
bodyimage6	The insulin pump bothers me when I exercise	1. Strongly disagree 2. Disagree 3. Neither disagree nor agree 4. Agree 5. Strongly agree
bodyimage7	The insulin pump bothers me when I have sex	1. Strongly disagree 2. Disagree 3. Neither disagree nor agree 4. Agree 5. Strongly agree
bodyimage8	The insulin pump prohibits me from wearing the clothes that I want to wear	1. Strongly disagree 2. Disagree 3. Neither disagree nor agree 4. Agree 5. Strongly agree

Page 13 of 28: Exercise, diet, alcohol habits and smoking status

Scale/item [branching logic]	Question	Response categories
In the following, we ask about your general health behavior, including exercise, diet and alcohol habits as well as smoking status.		
exercise1	In a normal week, how much time do you spend doing physical activities that cause you to be short of breath	1. 0 minutes / No time 2. Less than 30 minutes 3. 30-60 minutes (0.5-1 hour)

	(e.g., running, gymnastics, or ball games)?	4. 60-90 minutes (1-1.5 hours) 5. 90-120 minutes (1.5-2 hours) 6. 120-150 minutes (2-2.5 hours) 7. More than 150 minutes
exercise2	In a normal week, how much time do you spend doing everyday exercise (e.g., walking, cycling or manual labor)?	1. 0 minutes / No time 2. Less than 30 minutes 3. 30-60 minutes (0.5-1 hour) 4. 60-90 minutes (1-1.5 hours) 5. 90-150 minutes (1.5-2.5 hours) 6. 150-300 minutes (2.5-5 hours) 7. More than 300 minutes (5 hours)
exercise3	How much time do you spend sitting down on a regular day when sleep is not included?	1. Pretty much all day 2. 13-15 hours 3. 10-12 hours 4. 7-9 hours 5. 4-6 hours 6. 1-3 hours 7. No time
diet1	How many vegetables do you eat (raw or prepared)? Think in servings, e.g., a carrot or 100 g fried vegetables. If you eat both a carrot and 100 g of fried vegetables, you have eaten two servings.	1. 6 a day or more 2. 5-6 a day 3. 3-4 a day 4. 1-2 a day 5. 5-6 a week 6. 3-4 a week 7. 1-2 a week 8. Fewer or none
diet2	How much fruit do you eat? Think in servings, e.g., an apple or 10 grapes.	1. 6 a day or more 2. 5-6 a day 3. 3-4 a day 4. 1-2 a day 5. 5-6 a week 6. 3-4 a week 7. 1-2 a week 8. Fewer or none
diet3	How often do you eat whole grains? Whole grain foods include, e.g., oatmeal, rye bread, whole grain bread or whole grain pasta.	1. More than 2 times a day 2. 1-2 times a day 3. 4-6 times a week 4. 1-3 times a week 5. Rarely or never
diet4	How often do you eat fish (fresh, prepared, or canned)?	1. More than once a day 2. 5-7 times a week 3. 3-4 times a week 4. 1-2 times a week 5. Rarely or never
diet5	Do you follow The Danish Health Authority's recommendation to eat less saturated fat and choose plant oil instead? Recommendation: Choose lean meat and lean dairy products, and limit the amount of butter, whole-fat cheeses and cream. Use plant oil/liquid margarine in cooking.	1. Almost always 2. Usually 3. Occasionally 4. Rarely 5. Never
diet6	To the best of your knowledge, how often does is your intake of fast carbohydrates in the form of, e.g.,	1. Never or very rarely 2. Rarely (about once a month) 3. Occasionally (a few times a month)

	candy, cake, ice cream and other sweets so great that it causes a prolonged blood sugar increase?	4. Often (1-2 times a week) 5. Very often (daily or almost daily)
alcohol	How much beer, wine, and/or spirits do you drink on average per week? Please reply in units of alcohol (1 unit equals, e.g., 1 beer, 1 glass of wine, 1 schnapps or 1 shot).	1. I do not drink 2. 1-7 units 3. 8-14 units 4. 14-21 units 5. More than 21 units
smoking	Do you smoke?	1. No 2. Yes, daily 3. Yes, occasionally 4. Former smoker

Page 14 of 28: Fear of hypoglycemia

The Hypoglycaemia Fear Survey II Short-Form questionnaire scale has been removed from this document due to copyright. The complete scale can be found in the original publication: *An empirically derived short form of the Hypoglycaemia Fear Survey II*.⁵

Page 15 of 28: Diabetes distress

The Type-1 Diabetes Distress Scale has been removed from this document due to copyright. The complete scale can be found in the original publication: *Understanding the sources of diabetes distress in adults with type 1 diabetes*.⁶

Page 16 of 28: Social support

The DAWN Support for Diabetes Self-Management Profile questionnaire scale has been removed from this document due to copyright. The complete scale can be found in the original publication: *Diabetes Attitudes, Wishes and Needs second study (DAWN2TM): Cross-national benchmarking of diabetes-related psychosocial outcomes for people with diabetes*.⁷

Page 17 of 28: Self-efficacy

The General Self-Efficacy Scale has been removed from this document due to copyright. The complete scale can be found in the original publication: *Self-efficacy as a resource factor in stress appraisal processes. In: Self-efficacy: Thought control of action*.⁸

Page 18 of 28: Goal setting

Scale/item [branching logic]	Question	Response categories
HbA1c		
hba1c_intro	What HbA1c level would you yourself like to be at? You can enter your answer in either % or mmol/mol by indicating your preference here.	1. % 2. mmol/mol 3. I have not set myself a fixed goal for HbA1c
hba1c_goal_percent [if hba1c_intro = 1]	HbA1c (%)	Free-form text response
hba1c_goal_mmol [if hba1c_intro = 2]	HbA1c (mmol/mol)	Free-form text response
hba1c_realistic [if hba1c_intro ≠ 3]	How likely do you think it is that you will have achieved/stayed on that particular HbA1c in a year? Please indicate your answer on a scale from 0-10.	0. Completely unlikely 10. Completely likely

Page 19 of 28: Health status, satisfaction with life and well-being

Scale/item [branching logic]	Question	Response categories
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The next questions are more about your general health and overall satisfaction with life.		
healthstatus	How good or bad do you consider your health today? Please indicate your answer on a scale from 0-10.	0. Very bad 10. Very good
satisfaction	How satisfied are you with your life today all things considered? Please indicate your answer on a scale from 0-10.	0. Not at all satisfied 10. Completely satisfied

The WHO-5 Well-being Index questionnaire scale has been removed from this document due to copyright. The complete scale can be found in the following publication: *The WHO-5 Well-Being Index: a systematic review of the literature.*⁹

Page 20 of 28: COVID-19-related quality of life

The COVID-19 Impact on Quality of Life Dimensions questionnaire scale has been removed from this document due to copyright. The complete scale can be found in the original publication: *Impact of the COVID-19 pandemic and lockdown restrictions on psychosocial and behavioural outcomes among Australian adults with type 2 diabetes: findings from the PREDICT cohort study.*³

Page 21 of 28: Lottery

Scale/item [branching logic]	Question	Response categories
<p>You are now finished with the part of the questionnaire about your diabetes and your insulin pump.</p> <p>We hope you also want to answer the next questions, which are more about you in general terms. Your answer to these questions will be used to gain an understanding of how people make decisions.</p> <p>The questions are not a test and there are no right or wrong answers.</p>		
lottery	Imagine that you unexpectedly inherit 2,500 kr from a distant relative. You then get the opportunity to participate in a lottery with an equal chance of either doubling the money to 5,000 kr. or losing the money. This means that there is a 50% chance that you will walk away with 5,000 kr. and a 50% chance of losing the 2,500 kr. Which choice would you make in this scenario?	1. I choose to participate in the lottery 2. I choose not to participate in the lottery and keep the 2,500 kr.

Page 22 of 28: Risk

Scale/item [branching logic]	Question	Response categories
Where do you stand with regards to taking risks?		
risk1	Are you someone who is willing to take risks in general? Please indicate your answer on a scale from 0-10.	0. Fully unwilling 10. Fully willing
risk2	Are you someone who is willing to take risks with your health in general? Please indicate your answer on a scale from 0-10.	0. Fully unwilling 10. Fully willing
risk3	Are you someone who is willing to take risks with your financial situation? Please indicate your answer on a scale from 0-10.	0. Fully unwilling 10. Fully willing

Page 23 of 28: Patience and impulsivity

Scale/item [branching logic]	Question	Response categories
How patient and impulsive are you?		
patience	In general, how patient are you? Please indicate your answer on a scale from 0-10.	0. Very impatient 10. Very patient
impulsive	Are you a person who generally acts impulsively, or do you think a lot about things before you act? Please indicate your answer on a scale from 0-10.	0. Not impulsive at all 10. Very impulsive
riskage	Think about the future. How likely do you think it is that you will experience your 90 th birthday? Please indicate your answer on a scale from 0-10.	0. Completely unlikely 10. Completely likely

Page 24 of 28: Self-image

Scale/item [branching logic]	Question	Response categories
liveplando_intro	To what degree do you agree with the following statements?	
livelife	I live life one day at a time and do not think too much about my future.	1. Strongly disagree 2. Disagree 3. Neither disagree nor agree 4. Agree 5. Strongly agree
planlife	I plan everything in good time.	1. Strongly disagree 2. Disagree 3. Neither disagree nor agree 4. Agree 5. Strongly agree
dolife	When I set a goal for myself, I always achieve it.	1. Strongly disagree 2. Disagree 3. Neither disagree nor agree 4. Agree 5. Strongly agree

Page 25 of 28: Monetary time preferences 1

Scale/item [branching logic]	Question	Response categories
The following questions are about time and money. The questions are not a test and there are no right or wrong answers.		
priselist_intro1	<p>Imagine that you can choose between getting 5,000 kr. today or another amount in 1 year. What amount do you prefer in each of the following seven scenarios? The money is yours no matter what, and there is no risk of you losing a future amount if you choose to wait.</p> <p>We have filled out the first answer for you as we believe you would prefer to have 5,000 kr. in your hand today rather than in 1 year.</p>	
pricelist1		1. 5,000 kr. today

		2. 5,000 kr. in a year
pricelist2		1. 5,000 kr. today 2. 5,100 kr. in a year
pricelist3		1. 5,000 kr. today 2. 5,250 kr. in a year
pricelist4		1. 5,000 kr. today 2. 5,500 kr. in a year
pricelist5		1. 5,000 kr. today 2. 6,000 kr. in a year
pricelist6		1. 5,000 kr. today 2. 7000 kr. in a year
pricelist7		1. 5,000 kr. today 2. 9000 kr. in a year

Page 26 of 28: Monetary time preferences 2

Scale/item [branching logic]	Question	Response categories
<p>The next questions are like the previous, only now the time horizon varies.</p> <p>In the following scenarios, how much money would you require <u>in addition to the 5,000 kr.</u> if you were to wait on receiving them?</p> <p>There are no right or wrong answers.</p> <p>When you enter an amount, the total sum is calculated in the following field, and you therefore do not have to write anything in this field.</p>		
tp1	How much money would you require in addition to the 5,000 kr. if you had to wait <u>1 month</u> to get the money?	Free-form text response
tp1_calc [if tp1 ≠ .]	This means that instead of 5,000 kr. today, you will get...	X kr. in 1 month
tp2	How much money would you require in addition to the 5,000 kr. if you had to wait <u>3 months</u> to get the money?	Free-form text response
tp2_calc [if tp2 ≠ .]	This means that instead of 5,000 kr. today, you will get	X kr. in 3 months
tp3	How much money would you require in addition to the 5,000 kr. if you had to wait <u>6 months</u> to get the money?	Free-form text response
tp3_calc [if tp3 ≠ .]	This means that instead of 5,000 kr. today, you will get	X kr. in 6 months
tp4	How much money would you require in addition to the 5,000 kr. if you had to wait <u>12 months</u> to get the money?	Free-form text response
tp4_calc [if tp4 ≠ .]	This means that instead of 5,000 kr. today, you will get	X kr. in 12 months
tp5	How much money would you require in addition to the 5,000 kr. if you had to wait <u>24 months</u> to get the money?	Free-form text response
tp5_calc [if tp5 ≠ .]	This means that instead of 5,000 kr. today, you will get	X kr. in 24 months

Page 27 of 28: Monetary time preferences 3

Scale/item [branching logic]	Question	Response categories
<p>Now imagine a situation where you cannot get the 5,000 kr. before 12 months from now.</p>		
tp24	How much money would you require in addition to the 5,000 kr. <u>in 12</u>	Free-form text response

	<u>months</u> for you to wait <u>another 12 months</u> to get the money?	
tp24_calc	This means that instead of getting 5,000 kr. in 12 months you will get	X kr. in 24 months

Page 28 of 28: Correct answers to the carbohydrate counting challenge and closing remarks.

Questionnaire scale references

1. Polonsky WH, Fisher L, Hessler D, et al. Development of a New Measure for Assessing Insulin Delivery Device Satisfaction in Patients with Type 1 and Type 2 Diabetes. *Diabetes Technol Ther* 2015; **17**: 773-779.
2. Polonsky WH, Fisher L, Hessler D, et al. Development of a New Measure for Assessing Glucose Monitoring Device-Related Treatment Satisfaction and Quality of Life. *Diabetes Technol Ther* 2015; **17**: 657-663.
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4. Acquadro C, Conway K, Hareendran A, et al. Literature review of methods to translate health-related quality of life questionnaires for use in multinational clinical trials. *Value Health* 2008; **11**: 509-521.
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7. Nicolucci A, Kovacs Burns K, Holt RI, et al. Diabetes Attitudes, Wishes and Needs second study (DAWN2): cross-national benchmarking of diabetes-related psychosocial outcomes for people with diabetes. *Diabet Med* 2013; **30**: 767-777.
8. Jerusalem M, Schwarzer R. Self-efficacy as a resource factor in stress appraisal processes. In: Schwarzer R (eds). *Self-efficacy: Thought control of action*. Washington D.C.: Hemisphere, 1992; 195-213.
9. Topp CW, Ostergaard SD, Sondergaard S, et al. The WHO-5 Well-Being Index: a systematic review of the literature. *Psychother Psychosom* 2015; **84**: 167-176.

Table S2: General health behavior

Variables	Responders (n = 770)	Missing
Physical activity level		59
Meets recommendation	239 (34)	
Does not meet recommendation	472 (66)	
Nutrition / healthy eating		
Meets recommendation	269 (38)	
Partially meets recommendation	391 (55)	
Does not meet recommendation	50 (7)	
Alcohol intake / men		26
0-14 units (recommended)	238 (84)	
>14 – 21 units	34 (12)	
> 21 units	12 (4)	
Alcohol intake / women		
0-7 units (recommended)	360 (85)	
>7 – 14 units	53 (13)	
>14 – 21 units	8 (2)	
> 21 units	3 (1)	
Smoking status		91
Yes	82 (12)	
No	627 (88)	

Physical activity level recommendations were based on meeting the WHO recommendations.¹ The nutrition/healthy eating measure included items based the European diabetes diet recommendation.² The items covered intake of whole grains, fruits, vegetables, fish, fats and sugars. Three categories were constructed based on the following scoring system:

- 1) 0-4: Does not meet recommendations
- 2) 5-8: Partially meets recommendations
- 3) 9-12: Meets recommendations (always/almost always)

Item	Question	Response categories	Score
diet1	<i>How many vegetables do you eat (raw or prepared)?</i> Think in servings, e.g., a carrot or 100 g fried vegetables. If you eat both a carrot and 100 g of fried vegetables, you have eaten two servings.	1. 6 a day or more 2. 5-6 a day 3. 3-4 a day	2
		4. 1-2 a day 5. 5-6 a week	1
		6. 3-4 a week 7. 1-2 a week 8. Fewer or none	0

diet2	<p><i>How much fruit do you eat?</i></p> <p>Think in servings, e.g., an apple or 10 grapes.</p>	3-4 a day 1-2 a day	2
		5-6 a day 5-6 a week 3-4 a week	1
		6 a day or more 1-2 a week Fewer or none	0
diet3	<p><i>How often do you eat whole grains?</i></p> <p>Whole grain foods include, e.g., oatmeal, rye bread, whole grain bread or whole grain pasta.</p>	1. More than 2 times a day 2. 1-2 times a day	2
		4-6 times a week 1-3 times a week	1
		Rarely or never	0
diet4	<p><i>How often do you eat fish (fresh, prepared, or canned)?</i></p>	More than once a day 5-7 times a week 3-4 times a week	2
		1-2 times a week	1
		Rarely or never	0
diet5	<p><i>Do you follow The Danish Health Authority's recommendation to eat less saturated fat and choose plant oil instead?</i></p> <p>Recommendation: Choose lean meat and lean dairy products, and limit the amount of butter, whole-fat cheeses and cream. Use plant oil/liquid margarine in cooking.</p>	Almost always Usually	2
		Occasionally	1
		Rarely Never	0
diet6	<p><i>To the best of your knowledge, how often does is your intake of fast carbohydrates in the form of, e.g., candy, cake, ice cream and other sweets so great that it causes a prolonged blood sugar increase?</i></p>	Never or very rarely Rarely (about once a month)	2
		Occasionally (a few times a month)	1
		Often (1-2 times a week) Very often (daily or almost daily)	0

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1. Danquah IH, Skov SS, Callesen BR, et al. Validering af spørgsmål om fysisk aktivitet og siddetid [Validation of questions about physical activity and sitting time]. Copenhagen: Statens Institut for Folkesundhed [National Institute of Public Health] 2016.
2. Mann JI, De Leeuw I, Hermansen K, et al. Evidence-based nutritional approaches to the treatment and prevention of diabetes mellitus. *Nutrition, Metabolism and Cardiovascular Diseases* 2004;14:373-394.